STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PAUL R. LEPAGE
GOVERNOR

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Lincoln Paper & Tissue, LLC
Penobscot County
Lincoln, Maine
A-177-77-6-A

Departmental
Findings of Fact and Order
New Source Review
NSR #6

FINDINGS OF FACT

After review of the air emissions license amendment application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	Lincoln Paper & Tissue, LLC (LPT)
LICENSE TYPE	06-096 CMR 115, Minor Modification
NAICS CODES	322121
NATURE OF BUSINESS	Pulp & Paper
FACILITY LOCATION	Katahdin Avenue Lincoln, ME

B. Amendment Description

LPT is proposing to retrofit four existing combustion units to make them capable of firing natural gas at their pulp and paper manufacturing facility located in Lincoln, Maine. The four units to be retrofitted include Power Boiler #6, Power Boiler #7, Power Boiler #8, and the Lime Kiln.

C. Emission Equipment

The following equipment is addressed in this air emission license:

Fuel Burning Equipment

Equipment	Maximum Capacity (MMBtu/hr)	Date of Manufacture	Fuel Type *	Control Device	Stack #
Power Boiler #6	127	1976	No. 6 fuel oil, biofuel, on and off specification waste oil, natural gas	none	6

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

web site: www.maine.gov/dep

Power Boiler #7	100.1	1945	No. 6 fuel oil, biofuel, on and off specification waste oil, natural gas	none	7
Power Boiler #8	433	1991	No. 2 fuel oil, on and off specification waste oil, coal, NCG/TRS, biomass, demo wood, bark and wood waste, biofuel, solid oily waste, WTP sludge, liquor soap residue, waste paper, TDF, natural gas	ESP	11
Lime Kiln	47.8	1958	No. 6 fuel oil, on and off specification waste oil, biofuel, NCG/TRS, natural gas	Venturi Wet Scrubber	5

* This amendment maintains the firing of existing licensed fuels and adds the capability to burn natural gas in these units.

D. Application Classification

The application for LPT does not violate any applicable federal or state requirements and does not reduce monitoring, reporting, testing or record keeping. This application does seek to modify a Best Available Control Technology (BACT) analysis performed per New Source Review.

Additionally, the modification of a major source is considered a major modification based on whether or not expected emissions increases exceed the "Significant Emission Increase Levels" as given in *Definitions Regulation*, 06-096 CMR 100 (as amended).

The emission increases are determined by subtracting the baseline actual emissions of any consecutive 24 month period in the ten year period preceding the modification (or representative 24 months) from the projected actual emissions. The results of this test are as follows:

Pollutant	Baseline Actual Emissions 7/04 – 6/06 (ton/year)	Projected Actual Emissions (ton/year)	Net Emissions Increase (ton/year)	Significant Emissions Levels (ton/year)
PM	27.5	29.5	2.0	25
PM_{10}	27.5	29.5	2.0	15
$PM_{2.5}$	27.5	29.5	2.0	10
SO_2	63.5	1.6	- (61.9)	40
NO_x	253.4	285.2	31.8	40
CO	241.5	79.6	- (161.9)	100
VOC	5.2	5.7	0.5	40
CO_2e	204,792	124,937	- (79,856)	75,000

Note: The above numbers are for Power Boiler #6, Power Boiler #7, Power Boiler #8, and Lime Kiln only. None of the other equipment at the facility is affected by this amendment.

Therefore, this amendment is determined to be a minor modification under *Minor and Major Source Air Emission License Regulations* 06-096 CMR 115 (as amended) since the changes being made are not addressed or prohibited in the Part 70 air emission license. An application to incorporate the requirements of this amendment into the Part 70 air emission license shall be submitted no later than 12 months from commencement of the requested operation.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in 06-096 CMR 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Affected Fuel Burning Equipment

1. Power Boilers #6 & #7

The existing Power Boilers #6 and #7 have maximum heat input capacities of 127 MMBtu/hr and 100.1 MMBtu/hr, respectively. Both boilers are currently licensed to utilize #6 fuel oil with a sulfur content $\leq$0.7%, biofuel, and on and off specification waste oil. Power Boiler #6 was manufactured in 1976 by Erie City and Power Boiler #7 was manufactured in 1945 by Babcock and Wilcox. Power Boiler #6 and Power Boiler #7 exhaust through a common stack shared with Power Boiler #3, which has a single opacity monitor.

LPT is proposing to retrofit Power Boiler #6 and Power Boiler #7 to fire up to 100% natural gas. No increase in operational capability will result from this conversion and overall heat input capacity will not be affected. Because the use of natural gas will depend highly on economic feasibility including price of fuels and the potential supply of natural gas from a third party's pipeline, LPT is proposing to maintain the ability to fire all currently licensed fuels.

2. **Power Boiler #8**

Power Boiler #8 has a maximum heat input capacity of 433 MMBtu/hr and is currently licensed to fire No. 2 fuel oil, biomass, coal, tire-derived fuel (TDF), demo wood, bark and wood waste, biofuel, on and off specification waste oil, solid oily waste, waste treatment plant (WTP) sludge, liquor soap residue, waste paper, total reduced sulfur (TRS) gas, and non-condensable gases (NCG). Power Boiler #8 was manufactured in 1991 by McBurney and is equipped with a mechanical dust collector and electrostatic precipitator (ESP). LPT operates continuous emissions monitoring systems (CEMS) for NOx, oxygen (O_2), and opacity and exhausts through a 237 foot stack.

LPT is proposing to retrofit Power Boiler #8 to fire up to 100% natural gas. No increase in operational capability will result from this conversion and overall heat input capacity will not be affected. LPT is proposing to maintain the ability to fire all currently licensed fuels, including biomass, in Power Boiler #8.

3. **Lime Kiln**

The Lime Kiln at LPT has a maximum heat input capacity of 47.8 MMBtu/lb and is licensed to fire No. 6 fuel oil with a sulfur content $\leq$2.0%, biofuel, on and off specification waste oil, NCG, and TRS gases. The Lime Kiln is a rotary kiln used to recovery lime (CaO) from lime mud and was manufactured in 1958 by Allis-Chalmers. The Lime Kiln is currently licensed to support up to 650 air dried tons (ADT) of pulp per day (equivalent to 190 tons per day of 100% CaO). The kiln is equipped with a venturi wet scrubber to control emissions of PM/PM_{10}/$PM_{2.5}$, SO_2, total reduced sulfur (TRS), VOCs, and NOx. The Lime Kiln is also equipped with continuous emission monitoring systems (CEMS) for O_2 and TRS.

LPT is proposing to retrofit the Lime Kiln to fire up to 100% natural gas. Anticipated normal operation is expected to be approximately 90% natural gas and 10% #6 fuel oil. No increase in operational capability will result from this conversion and overall heat input capacity will not be affected. LPT is proposing to maintain the ability to fire all currently licensed fuels.

C. BACT for Power Boilers #6, #7, and #8 and the Lime Kiln

Power Boiler #6, Power Boiler #7, Power Boiler #8, and the Lime Kiln are all currently licensed to burn fuel oil in addition to other fuels, as summarized in Section I A *Emission Equipment*. The proposed retrofit will enable these units to burn natural gas, while maintaining the ability to fire all previously licensed fuels. The retrofit is not anticipated to have any effect on the overall utilization of the mill or the capability of any individual emission unit, either positively or negatively.

Recent amendments to PM_{10} and $PM_{2.5}$ definitions, effective December 1, 2012, incorporate gaseous emissions which condense to form particulate matter at ambient temperature (condensable PM) to emission limitations in Prevention of Significant Deterioration (PSD) permits. To comply with these definition amendments, LPT will maintain the existing filterable particulate limits while adding the expected condensable fraction of particulate. Thus, the proposed emission limits for PM_{10} and $PM_{2.5}$ summarized in the table below are total $PM_{10}/PM_{2.5}$ limits, including the filterable and condensable particulate fractions

The following BACT analysis focuses on NOx emissions since that is the pollutant that could increase most from baseline emissions.

1. **Lime Kiln**

NOx emissions from lime kilns are generated from fossil fuel burning. A 2003 National Council for Air and Stream Improvement (NCASI) study concluded that NOx emissions from oil-fired kilns are likely formed by the fuel NOx mechanism and that NOx emissions from gas-fired kilns are largely formed by the thermal NOx mechanism. NOx emissions from oil-fired kilns are strongly dependent on oxygen availability in the combustion zone. NOx emissions from gas-fired kilns depend on the dry end lime temperature.

Potential control technologies for NOx emissions from lime kilns include: Selective Catalytic Reduction (SCR), Selective Non-Catalytic Reduction (SNCR), Flue Gas Recirculation (FGR), Low NOx Burners, and good combustion practices.

Selective Non-Catalytic Reduction

SNCR is based on the chemical reduction of NOx into molecular nitrogen (N_2) and water vapor (H_2O). A nitrogen based reducing agent such as ammonia or urea is injected into the post combustion flue gas. The following set of reduction reactions with NOx is favored over other chemical reaction processes at temperatures ranging between 870 to 1150 °C:

$4NO + 4NH3 + O_2 \rightarrow 4N_2 + 6H_2O$
$2NO_2 + 4NH3 + O_2 \rightarrow 3N_2 + 6H_2O$
$NO + NO_2 + 2\ NH_3 \rightarrow 2N_2 + 3H_2O$

This temperature window occurs mid-length inside the rotating body of the lime kiln, which typically has a temperature gradient of 1150-1250 °C at the hot end to 950 °C at the flue gas discharge. Locating ammonia or urea injection nozzles in this area of the lime kiln has not been demonstrated technically feasible for this lime kiln. Therefore, this option has been removed from consideration as it is not technically feasible.

Selective Catalytic Reduction

SCR also chemically reduces NOx into N_2 and H_2O and utilizes a nitrogen based reducing agent, which is injected into the post combustion flue gas. The waste gas mixes with the reagent and diffuses through a catalyst bed. The reagent reacts selectively with the NOx within a specific temperature range in the presence of the catalyst and oxygen. The optimum temperature range depends on the catalyst used and flue gas composition and could range from 250 °C to 430°C. Because the flue gases leaving the lime kiln are laden with lime mud dust as well as known catalyst deactivators (sodium, phosphorus and potassium), the catalyst bed has the potential to plug and deactivate. Therefore, this option has been removed from consideration as it is not technically feasible.

Flue Gas Recirculation

FGR reduces NOx emissions by recirculating a portion of the combustion flue gas into the main combustion chamber. This process reduces the peak combustion temperature and lowers the available oxygen in the combustion air/flue gas mixture, thus reducing the formation of thermal NOx caused by high flame temperatures. Reducing the flame temperature, however, decreases the radiant heat transfer to the calcium carbonate in the kiln and reduces the conversion efficiency of calcium carbonate to lime. This conversion is integral to the Kraft chemical recovery process. Therefore, this option has been removed from consideration as it would hinder the Kraft chemical recovery process.

Low NOx Burners

Low NOx burners use flame geometry control and fuel to air mixing to reduce the formation of thermal NOx. There are many variations on the low NOx burner strategy, the burner to be installed in the Lime Kiln is a low NOx design but there are limitations to its use in a lime kiln. Lime kilns require a precise flame shape and peak temperature in order to achieve the heat transfer to calcium carbonate to

create the chemical and thermodynamic conditions for lime to be produced. Adjusting the flame shape and/or temperature could hinder the lime production process. Therefore, tuning of the burner for NOx control may be somewhat limited to assure proper operation of the kiln.

Combustion of Clean Fuels

The combustion of clean fuels to minimize NOx emissions is accomplished by burning fuels with less fuel bound nitrogen. LPT is proposing to allow for the use of natural gas in the Lime Kiln which is an inherently low nitrogen fuel and will ultimately result in lower fuel NOx.

Good Combustion Practices

Good combustion practices ensure the proper excess air range in the lime kiln for controlling fuel NOx formation while combusting fuel oil and properly monitoring the process and dry end temperature to minimize thermal NOx formation while combusting natural gas.

Selection of BACT

Due to the technical infeasibility of potential add-on control technology options for control of NOx from the Lime Kiln, LPT is proposing the use of low NOx burner design, good combustion practices, and the use of an inherently low nitrogen fuel represents BACT. In addition, LPT will continue to comply with a NOx limit of 120 ppmv wet basis corrected to 10% O_2 on a 1-hour average (equivalent to 236 ppmv dry basis corrected to 10% O_2) as established in Lincoln's NOx RACT amendment (A-177-71-G-A).

2. **Power Boiler #8**

There are four potential approaches for control of NOx from industrial sized boilers including:

1) Add-on flue gas treatment controls;
2) Flue gas recirculation (FGR);
3) Low NOx burners; and
4) Combustion of clean fuels.

Add-on Controls

Add-on pollution control technology for the reduction of nitrogen oxides (NOx) includes SNCR and SCR. The cost of installing add-on controls and associated annual operating costs, added energy consumption, and operation and maintenance costs does not make this option economically feasible. Any cost

estimates generated would be subject to significant error due to the potentially non-linear burden of engineering and other project costs associated with LPT's proposed project to retrofit Power Boiler #8.

Flue Gas Recirculation

NOx can be controlled through combustion practices including low excess air firing and FGR. In an FGR system, a portion of the flue gas is re-circulated back into the main combustion chamber, where thermal NOx formation is reduced by decreasing the peak flame temperatures. Typically, ductwork is run from the boiler outlet duct to the combustion air duct. The costs and logistics of installing a FGR system on an existing multi-fuel boiler, including the associated annual operating costs, added energy consumption, and operation and maintenance costs, does not make this option economically feasible.

Low NOx Burners

Low NOx burners use flame geometry control and fuel to air mixing to reduce the formation of thermal NOx. There are many variations on the low NOx burner strategy. LPT is proposing to install burners designed to produce a low NOx flame.

Combustion of Clean Fuels

The combustion of clean fuels to minimize NOx emissions is accomplished by burning fuels with less fuel bound nitrogen. LPT is proposing to allow for the use of natural gas in Power Boiler #8 which is an inherently low nitrogen fuel and will ultimately result in lower fuel NOx.

Selection of BACT

Due to the infeasibility of potential add-on control technology options for control of NOx from Power Boiler #8, LPT is proposing the installation of burners designed to produce a low NOx flame and the combustion of clean fuels. Lincoln will comply with a NOx emission limit of 0.30 lb/MMBtu based on a 30 day rolling average when burning natural gas to demonstrate BACT.

3. **Power Boilers #6 and #7**

As mentioned previously, the four potential approaches for control of NOx from industrial sized boilers include: add-on flue gas treatment controls, flue gas recirculation (FGR), Low NOx burners, and combustion of clean fuels. For Power Boilers #6 and #7, the combustion of clean fuel, good combustion

efficiency, and proper maintenance practices is technically and economically feasible and meets BACT.

BACT Summary

A more detailed BACT analysis can be found in LPT's March 2013 application submittal. The following summarizes the applications findings and subsequently the Department's BACT determinations for emissions from combustion of natural gas.

LPT will comply with the following operational and maintenance practices for the combustion of natural gas:

- LPT will install burners designed to produce low NOx emissions, employ good combustion practices, and use an inherently low bound nitrogen content fuel as BACT for control of NOx emissions from the Lime Kiln.
- LPT will install burners designed to produce low NOx emissions and the use of an inherently low nitrogen content fuel as BACT for control of NOx from Power Boiler #8;
- LPT will continue operation of a wet venturi scrubber and the use of natural gas, which naturally has a low ash content, as BACT for control of PM emissions from the Lime Kiln; and
- LPT will use good combustion efficiency and proper maintenance practices representing BACT for the control of VOC and CO emissions from Power Boiler #6, Power Boiler #7, Power Boiler #8, and the Lime Kiln.

1. The emission limits are summarized below:

Pollutant	Existing Limits	New Limits
	Power Boiler #6	
PM	0.15 lb/MMBtu 19.1 lb/hr	No Change
PM_{10}	15.2 lb/hr (filterable)	16.5 lb/hr (filterable + condensable) [1]
$PM_{2.5}$	No limit	16.5 lb/hr (filterable + condensable) [1]
SO_2	266.9 lb/hr	No Change
NOx	0.40 lb/MMBtu 50.8 lb/hr	No Change
CO	25.4 lb/hr	No Change

VOC	1.3 lb/hr	No Change
Power Boiler #7		
PM	0.15 lb/MMBtu 15 lb/hr	No Change
PM10	12 lb/hr (filterable)	13.0 lb/hr (filterable + condensable) [1]
PM2.5	No limit	13.0 lb/hr (filterable + condensable) [1]
SO2	210.4 lb/hr	No Change
NOx	0.40 lb/MMBtu 45.1 lb/hr	No Change
CO	20 lb/hr	No Change
VOC	1.0 lb/hr	No Change
Power Boiler #8		
PM	0.02, 0.027 lb/MMBtu [2] 10.7 lb/hr	No Change
PM10	0.02, 0.027 lb/MMBtu [2] (filterable) 10.7 lb/hr (filterable)	14.7 lb/hr (filterable + condensable) [1] By Stack Test
PM2.5	No limit	14.7 lb/hr (filterable + condensable) [1]
SO2	267.3 lb/hr	No Change
NOx	0.45, 0.30 lb/MMBtu [3] 231.3 lb/hr	No Change
CO	0.7 lb/MMBtu 302.8 lb/hr	No Change
VOC	0.052 lb/MMBtu 22.5 lb/hr	No Change
Lime Kiln		
PM	0.13 gr/dscf at 10% O2 20.9 lb/hr	No Change
PM10	20.9 lb/hr (filterable)	21.7 lb/hr (filterable + condensable)
PM2.5	No Limit	21.7 lb/hr (filterable + condensable)
SO2	50 ppmv wet basis at 10% O2, 3-hr avg. 14.1 lb/hr	No Change
NOx	236 ppmv dry basis at 10% O2, 1-hr avg. 40.4 lb/hr	No Change

CO	220 ppmv wet basis at 10% O2, 3-hr avg. 27.1 lb/hr	No Change
VOC	25 ppmv wet basis at 10% O2, 3-hr avg. 1.8 lb/hr	No Change
TRS	20 ppmv wet basis at 10% O2, 12-hr block average CEMS	No Change

1 Based on existing PM filterable limit plus expected condensable emissions based on AP-42 emission factors or NCASI emission factors (See Appendix C for complete calculations).
2 LPT shall comply with a PM and PM10 limit of 0.02 lb/MMBtu when bark pile reclaim and WTP sludge heat inputs ≤10% of total heat input and a limit of 0.027 lb/MMBtu when bark pile reclaim and WTP sludge heat inputs >10% total heat input.
3 LPT shall comply with a NOx limit of 0.30 lb/MMBtu when firing oil or natural gas either alone or in combination with other non-fossil fuels.

2. Periodic Monitoring

Periodic monitoring for the boilers and lime kiln shall include recordkeeping to document fuel use both on a monthly and 12 month rolling total basis. Documentation shall include the type of fuel used (natural gas, biomass, fuel oil, etc.) and the sulfur content of the fuel oil.

D. Five Year Verification of Compliance

Because the difference between the calculated baseline actual to projected actual emissions of NOx are at least 50% of the PSD significance levels, LPT shall calculate and maintain records to document the annual NOx emissions, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change. In accordance with 40 CFR 52.21(r)(6)(iii), LPT shall maintain records of actual NOx emissions in tons per year on a calendar year basis for a period of five years following the date the project resumes operation after the natural gas retrofit project on both the Lime Kiln and POWER BOILER #8 is complete. Records shall document that emissions during this period do not exceed projected actual emissions. Emission calculations shall be based on actual production and/or fuel usage as well as CEM data, stack test results, and NCASI (or AP-42) emission factors in that order.

In accordance with 06-096 CMR 140 and 40 CFR 52.21(b)(41)(ii)(c), LPT may opt to exclude from its comparison against the projected actual emission estimates any portion of the unit's emissions following the project that one or more of the existing units could have accommodated during the consecutive two year period used to establish the baseline actual emissions and that are also unrelated to the particular project, including any increased utilization due to product demand

growth. Conversely, LPT recognizes that if the operation of an emissions unit to meet a particular level of demand could have been accomplished during the baseline period, but the increase is related to the changes made at the unit, then the emissions increases resulting from the increased operation must be attributed to the project, and cannot be subtracted from the projection of the projected actual emissions.

The projected actuals are currently based on average capacity factors of approximately 3%, 5%, 47%, and 53% for Power Boiler #6, Power Boiler #7, Power Boiler #8, and the Lime Kiln, respectively. If the capacity factors increase due to business conditions unrelated to the project, emissions related to this increased utilization that the mill was "capable of accommodating" may be subtracted from the projected actuals.

In the event of qualifying demand growth, LPT will document that the demand growth exemption applies and will demonstrate that the unit could have achieved the necessary utilization prior to the gas conversion project and that the increase in emissions is not related to the project.

E. NSPS & MACT Applicability

Power Boiler #6, Power Boiler #7, Power Boiler #8, and the Lime Kiln are each subject to New Source Performance Standards (NSPS) in 40 C.F.R. Part 60 and/or Maximum Achievable Control Technology (MACT) standards in 40 C.F.R. Part 63.
While the proposed natural gas retrofit project is characterized as a minor modification under the Maine NSR/PSD program, the NSPS and MACT standards define the term "modification" differently. Specifically, under NSPS, a modification is defined as the following:

> "...any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted."

The definition of a modification under the NSPS does not require a significant emissions increase, which is different from the definition under the NSR/PSD program. Licensed emission rates will not change as a result of the proposed natural gas conversion of the Power Boilers and the lime kiln; therefore the natural gas conversion project does not qualify as a modification under the NSPS.

Existing sources that undergo "reconstruction" may also be subject to review under the NSPS and MACT standards. Under these standards, reconstruction is defined as:

> "...as the replacement of components of an existing facility to such an extent that: (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and (2) It is technologically and economically feasible to meet the applicable standards set forth Part 60/Part 63. 40 C.F.R. Part 60 further defines 'fixed capital cost' as the capital needed to provide all the depreciable components." See 40 C.F.R. § 60.15 and 40 C.F.R. § 63.2.

Based on the preliminary estimate and engineering conducted by a third party, the total cost for the project is estimated at approximately $6,000,000. This low total project cost as compared to the significantly higher cost of an entirely new boiler, recovery boiler or lime kiln is significantly less than the 50% reconstruction threshold. Accordingly, these changes do not satisfy the definition of reconstruction under NSPS or MACT.

Thus this project does not trigger new more restrictive NSPS or MACT standards for newly constructed modified or reconstructed sources.

F. Incorporation into the Part 70 Air Emission License

The requirements in this 06-096 CMR 115 New Source Review amendment shall apply to LPT upon amendment issuance. Per *Part 70 Air Emission License Regulations*, 06-096 CMR 140 (as amended), Section 1(C)(8), for a modification that has undergone NSR requirements or been processed through 06-096 CMR 115, the source must then apply for an amendment to the Part 70 license within one year of commencing the proposed operations as provided in 40 CFR Part 70.5.

G. Annual Emissions

LPT current total licensed allowed annual emissions for the facility (used to calculate the annual air license fee) will not change as a result of this amendment.

III. AMBIENT AIR QUALITY ANALYSIS

LPT previously submitted an ambient air quality analysis demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards. An additional ambient air quality analysis is not required for this New Source Review minor modification.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-177-77-6-A pursuant to the preconstruction licensing requirements of 06-096 CMR 115 and subject to the specific conditions below.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

(1) **Power Boiler #6**

A. Power Boiler #6 is licensed to fire natural gas in addition to the fuels it is currently licensed to burn. LPT shall achieve good combustion efficiency for Boiler #6 and shall conduct proper maintenance practices.

B. Power Boiler #6 shall not exceed the following emission limits:

Pollutant	lb/MMBtu	lb/hr	Origin and Authority
PM	0.15	19.1	06-096 CMR 115, BPT
PM_{10}	-	15.2 (filterable only) 16.5 (filterable + condensable)	06-096 CMR 115, BPT
$PM_{2.5}$	-	16.5(filterable + condensable)	06-096 CMR 115, BPT
SO_2	-	266.9	06-096 CMR 115, BPT
NOx	0.40	50.8	06-096 CMR 115, BPT
CO	--	25.4	06-096 CMR 115, BACT
VOC	--	1.3	06-096 CMR 115, BACT

(2) **Power Boiler #7**

A. Power Boiler #7 is licensed to fire natural gas in addition to the fuels it is currently licensed to burn. LPT shall achieve good combustion efficiency for Boiler #7 and shall conduct proper maintenance practices.

B. Power Boiler #7 shall not exceed the following emission limits:

Pollutant	lb/MMBtu	lb/hr	Origin and Authority
PM	0.15	15.0	06-096 CMR 115, BPT
PM_{10}	-	12.0 (filterable only) 13.0 (filterable + condensable)	06-096 CMR 115, BPT
$PM_{2.5}$	-	13.0 (filterable + condensable)	06-096 CMR 115, BPT
SO_2	-	210.4	06-096 CMR 115, BPT
NOx	0.40	45.1	06-096 CMR 115, BPT
CO	--	20.0	06-096 CMR 115, BACT
VOC	--	1.0	06-096 CMR 115, BACT

(3) **Power Boiler #8**

A. Power Boiler #8 is licensed to fire natural gas in addition to the fuels it is currently licensed to burn. LPT shall install burners designed to produce low NOx emissions. LPT shall achieve good combustion efficiency for Power Boiler #8 and shall conduct proper maintenance practices.

B. Power Boiler #8 shall not exceed the following emission limits:

Pollutant	lb/MMBtu	Averaging times
PM & PM10	0.02, 0.027	PM and PM10 shall meet 0.02 lb/MMBtu when biomass fuels heat inputs ≤ 10%total heat input. PM and PM10 will meet 0.027 lb/MMBtu when biomass fuels heat inputs are > 10% of total heat input. Based on Stack Test Method
NOx	0.45, 0.30	The NOx emission limit in lb/MMBtu for Boiler #8 shall not exceed 0.45 lb/MMBtu on all fuels based on a 24 hour block average basis. A 24-hour block average basis shall be defined as midnight to midnight. Periods of start-up, shutdown and malfunction shall not be included in determining 24-hour average lb/MMBtu emissions. Also, LPT shall not exceed the NSPS NOx emission limit of 0.30 lb/MMBtu when firing oil and/or natural gas either alone or with other non-fossil fuels based on a 30-day rolling average.

CO	0.7	Based on Stack Test Method
VOC	0.052	Based on Stack Test Method

Pollutant	lb/hr	Origin and Authority
PM	10.7	06-096 CMR 115, BPT
PM10	10.7 (filterable only) 14.7 (filterable + condensable)	06-096 CMR 115, BPT
PM2.5	14.7 (filterable + condensable)	06-096 CMR 115, BPT
SO_2	267.3	06-096 CMR 115, BPT
NOx	231.3	06-096 CMR 115, BACT
CO	302.8	06-096 CMR 115, BPT
VOC	22.5	06-096 CMR 115, BACT

(4) **Lime Kiln**

A. The Lime Kiln is licensed to fire natural gas in addition to the fuels it is currently licensed to burn. LPT shall install burners designed to produce low NOx emissions and shall continue operation of a wet venturi scrubber. LPT shall achieve good combustion efficiency for Lime Kiln and shall conduct proper maintenance practices.

B. The Lime Kiln shall not exceed the following emission limits:

Pollutant	ppmv	lb/hr	Origin and Authority
PM	---	20.9	06-096 CMR 115, BACT
PM_{10}	---	20.9 (filterable) 21.7 (filterable + condensable)	06-096 CMR 115, BACT
PM 2.5	---	21.7 (filterable + condensable)	06-096 CMR 115, BACT
SO_2	50 ppmv wet basis @ 10% O_2, 3-hr average basis	14.1	06-096 CMR 115, BPT
NO_X	236 ppmv dry basis @ 10% O_2, 1-hr average basis	40.4	06-096 CMR 115, BACT
CO	220 ppmv wet basis @ 10% O_2, 3-hr average basis	27.1	06-096 CMR 115, BACT
VOC	25 ppmv wet basis @ 10% O_2, 3-hr average basis	1.8	06-096 CMR 115, BPT
TRS	20 ppmv wet basis @ 10% O_2, 12-hr block average	---	06-096 CMR 115, BPT

(5) LPT shall meet the applicable requirements of 40 CFR Part 52, §52.21 for calculating, recording, and reporting actual annual NOx emissions from Power Boiler #6, #7, and #8 and the Lime Kiln, in tons per year on a calendar year basis. Actual NOx emissions shall be determined for a period of 5 calendar years following

resumption of regular operations after the natural gas retrofit project on both the Lime Kiln and POWER BOILER #8 is complete, because the difference between the calculated baseline actual to projected actual emissions of NOx are at least 50% of the PSD significance levels. The emissions from the Power Boilers #6, #7, and #8 and the Lime Kiln shall be determined through each units fuel use, emission factors, and/or emission limits to demonstrate this project is below the projected actual emissions level of 285.2 tons of NOx per year.

(6) LPT shall submit an application to incorporate this amendment into the Part 70 air emission license no later than 12 months from commencement of the requested operation. [06-096 CMR 140, Section 1(C)(8)]

DONE AND DATED IN AUGUSTA, MAINE THIS 13 DAY OF June , 2013.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: for: John A. Silvanti / Deputy Commissioner
PATRICIA W. AHO, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: April 1, 2013
Date of application acceptance: April 9, 2013

Date filed with the Board of Environmental Protection:

Filed
JUN 13 2013
State of Maine
Board of Environmental Protection

This Order prepared by Edwin Cousins, Bureau of Air Quality